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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/364,317	07/30/1999	REINER WAMSSER	10191/1145	9279

26646 7590 02/11/2004

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EXAMINER

MASKULINSKI, MICHAEL C

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 02/11/2004

23

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/364,317

Applicant(s)

WAMSSER ET AL.

Examiner

Michael C Maskulinski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Non-Final Office Action

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poisner, U.S. Patent 6,012,154, and further in view of Kadnier, Windows NT 4: The Complete Reference.

Referring to claim 8:

- a. In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge that couples the host bus to an expansion bus with devices attached to the expansion bus (a safety device for a stored-program control coupling a computer bus system with a peripheral bus system, a peripheral being connected to the peripheral bus system).
- b. In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge. Although Poisner doesn't explicitly disclose that the expansion bus bridge has a controller, a controller for exchanging data with the processor (stored program control) is inherent to the system of Poisner because the expansion bus bridge is capable of resetting the processor in response to not receiving data. In column 2, lines 31-52 and in Figure 2, Poisner discloses an operating system-related software agent running on a processor that is separate from the processor (the stored-program control). However, Poisner doesn't

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explicitly disclose that the operating system is a real-time operating system. In Chapter 23, Kadnier teaches a real-time operating system. It would have been obvious to one of ordinary skill at the time of the invention to include the real-time operating system of Kadnier into the system of Poisner. A person of ordinary skill in the art would have been motivated to make the modification because in order for the invention of Poisner to be used in a time-critical environment the use of a real-time operating system would be necessary. For example in *Nuclear power/energy plant control: Critical control processes that depend on fail-safe response to external events. The computer systems controlling these processes must not only respond correctly, but must do so every time* (see Kadnier, Chapter 23, section **Initial User Direction and Input**).

c. Further, in column 4, lines 36-41, Poisner discloses an expansion bus bridge that couples the host bridge to an expansion bus (peripheral bus system) with devices coupled to the expansion bus. Further, in column 2, lines 31-52, Poisner discloses that the invention solves the problem of detecting and recovering from computer system malfunctions. A timer is set upon starting the computer. An operating system related software agent running on a processor periodically resets the timer. If the timer expires, an interrupt is generated which causes the processor to execute an interrupt handler, which is unrelated to the operating system. The interrupt includes a PCI interrupt (the stored-program control exchanging data, via a bus system, with a peripheral to be controlled).

- d. In column 4 lines 60-67 continued in column 5 lines 1-9, Poisner discloses a timer (monitor) which is periodically reset with the value stored in register (wake-up signal) by the software agent (stored-program control).

Referring to claim 10, in column 2, lines 31-52, Poisner discloses that if the timer does expire (function of wake-up signal), an interrupt is generated. The generated interrupt causes the processor to execute an interrupt handler. The interrupt handler attempts to investigate and cure any system malfunction that resulted in the timer expiring. One such interrupt it attempts to correct is Peripheral Component Interconnect interrupts. This involves data exchange with the expansion bus (bus system) and its inherent bus controller because the peripherals are connected to the expansion bus.

Referring to claim 11, in column 4, lines 36-41, Poisner discloses an alphanumeric input (control signal) connected to an expansion bus (interface), which is in turn connected to the host bus. In column 4, lines 14-26, Poisner discloses that the host bus is used for communicating information, such as instructions and data. Further, attached to the host bus is the expansion bus bridge (controller) and the software agent ran by the processor (stored-program control).

Referring to claims 12 and 14, placing at least the controller, the memory, the monitor, and the interface of the safety device on a circuit board is inherent to a device with components such as memories, controllers, watchdog timers, and buses.

Referring to claim 13:

- a. In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge that couples the host bus to an expansion bus with devices attached

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to the expansion bus (a safety device for a stored-program control coupling a computer bus system with a peripheral bus system, a peripheral being connected to the peripheral bus system).

b. In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge. Although Poisner doesn't explicitly disclose that the expansion bus bridge has a controller, a controller for exchanging data with the processor (stored program control) is inherent to the system of Poisner because the expansion bus bridge is capable of resetting the processor in response to not receiving data. In column 2, lines 31-52 and in Figure 2, Poisner discloses an operating system-related software agent running on a processor that is separate from the processor (the stored-program control). However, Poisner doesn't explicitly disclose that the operating system is a real-time operating system. In Chapter 23, Kadnier teaches a real-time operating system. It would have been obvious to one of ordinary skill at the time of the invention to include the real-time operating system of Kadnier into the system of Poisner. A person of ordinary skill in the art would have been motivated to make the modification because in order for the invention of Poisner to be used in a time-critical environment the use of a real-time operating system would be necessary. For example in *Nuclear power/energy plant control: Critical control processes that depend on fail-safe response to external events. The computer systems controlling these processes must not only respond correctly, but must do so every time* (see Kadnier, Chapter 23, section **Initial User Direction and Input**).

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c. Further, in column 4, lines 36-41, Poisner discloses an expansion bus bridge that couples the host bridge to an expansion bus (peripheral bus system) with devices coupled to the expansion bus. Further, in column 2, lines 31-52, Poisner discloses that the invention solves the problem of detecting and recovering from computer system malfunctions. A timer is set upon starting the computer. An operating system related software agent running on a processor periodically resets the timer. If the timer expires, an interrupt is generated which causes the processor to execute an interrupt handler, which is unrelated to the operating system. The interrupt includes a PCI interrupt (the stored-program control exchanging data, via a bus system, with a peripheral to be controlled).

d. Further, in column 4, lines 36-41, Poisner discloses an expansion bus bridge that couples the host bridge to an expansion bus (bus system). Devices (peripheral devices) coupled to the expansion bus include a display device, an alphanumeric input device, a BIOS read-only memory, and an information storage device for storing information including an operating system and applications. In column 4, lines 36-41, Poisner discloses an alphanumeric input (control signal) connected to an expansion bus (interface), which is in turn connected to the host bus. In column 4, lines 14-26, Poisner discloses that the host bus is used for communicating information, such as instructions and data. Further, attached to the host bus is the expansion bus bridge (controller) and the software agent ran by the processor (stored-program control).

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3. Claim 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poisner, U.S. Patent 6,012,154, and further in view of Kadnier, Windows NT 4: The Complete Reference.

Referring to claim 9, in column 2, lines 2-9, Poisner discloses generating an interrupt when the timer runs out. This interrupt is handled by the interrupt handler, which is internal to the system. Poisner never explicitly discloses providing an output signal displaying the interrupt. The examiner takes Official Notice that in the art of error detecting and displaying it is well known in the art to display the error (operability) in the system (stored-program control). It would have been obvious to one of ordinary skill at the time of the invention to include an output signal displaying the interrupt into the system of Poisner. A person of ordinary skill in the art would have been motivated to make the modification because in column 4, lines 1-13, Poisner discloses that the steps of loading the timer, periodically resetting the timer during the boot process and while attempting to cure the malfunction, and performing a more complete system reset can be repeated any number of times. Each time the timer expires, more severe actions can be performed in order to attempt to cure the malfunction. The most severe action might include powering down and then powering up the system. This last action usually requires user interaction with the system, therefore there must be an output signal displaying the interrupt to the user.

Allowable Subject Matter

4. Claims 1-7 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or reasonably suggest a safety device for a stored-program control coupling a computer bus system with a peripheral bus system, a peripheral being connected to the peripheral bus system, comprising a memory for storing safety-relevant data of the stored-program control, the safety-relevant data being accessible by a controller.

Response to Arguments

6. Applicant's arguments filed December 15, 2003 have been fully considered but they are not persuasive.

7. On page 5, under the section Remarks, the Applicant argues, "The Poisner reference does not recite a safety device that couples a computer bus system with a peripheral bus system to which a peripheral is connected, and which safety device includes a controller for exchanging data with the stored-program control." The Examiner respectfully disagrees. In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge that couples the host bus to an expansion bus with devices attached to the expansion bus (a safety device for a stored-program control coupling a computer bus system with a peripheral bus system, a peripheral being connected to the peripheral bus system). In column 4, lines 36-41 and in Figure 2, Poisner discloses an expansion bus bridge. Although Poisner doesn't explicitly disclose that the expansion bus bridge has a controller, a controller for exchanging data with the processor (stored program control) is inherent to the system of Poisner because the

expansion bus bridge is capable of resetting the processor in response to not receiving data.

8. On pages 6-7, under the section Remarks, the Applicant argues with respect to the Official Notice taken by the Examiner, "Applicants disagree with this assertion as being nothing more than an unsupported opinion based on Examiner's personal knowledge, for which assertion a supporting reference should be cited." The Examiner respectfully disagrees. The Examiner would like to note that to adequately traverse a rejection based on Official Notice, an applicant must specifically point out the supposed errors in the examiner's action which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art (see MPEP 2144.03, C.). However, for sake of argument, the Examiner has taken this argument to be a challenge of the use of Official Notice and directs the Applicant to class 714/57 entitled "Error forwarding and presentation" and the reference Pickett et al., U.S. Patent 5,062,147.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


U.S. Patent 4,618,953	Daniels et al.
U.S. Patent 5,247,163	Ohno et al.
U.S. Patent 6,173,339 B1	Yorimitsu

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C Maskulinski whose telephone number is (703) 308-6674. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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